Views of Hungary

on a treaty banning the production of fissile material of nuclear weapons
or other nuclear explosive devices

Hungary is fully committed to the process of nuclear disarmament and as an essential part thereof, to the establishment of a legally binding treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices (FMCT).

In our view, the elimination of nuclear weapons is not a single act, but rather a step-by-step process, in which the banning of the production of fissionable materials for weapons purposes, or a “fissile material cut-off”, is indeed the long overdue “next logical step”. The early commencement of FMCT negotiations is an internationally recognized priority, which has been reaffirmed by important decisions and documents of different multilateral fora, including the UN General Assembly, the UN Security Council, the Conference on Disarmament, as well as meetings of States parties to the Treaty on the Non-proliferation of Nuclear Weapons (NPT).

The potential of an FMCT to safeguard and increase international security is overwhelmingly convincing. By verifiably banning the production of fissile materials, an FMCT would contribute to the implementation of Article VI of the NPT, and through limiting the amount of direct-use materials which may be accessible to non-state actors for building improvised nuclear explosive devices. It may also significantly reduce the likelihood of these materials being used in terrorist acts.

Hungary welcomed the mandate put forward in 1995 in the Conference on Disarmament to negotiate a multilateral fissile material cut-off treaty. This mandate, also known as the Shannon mandate, still remains relevant and the CD, with its unique set-up and modalities, would be the right place to start the work on an FMCT. Hungary, as the first President of the Conference on Disarmament in 2013, did its utmost to turn this vision into reality.

However, until the CD remains in a deadlock, interested states should not be prevented from preparing the ground for eventual negotiations. It is in this spirit that Hungary supported the adoption of UN General Assembly resolution 67/53 entitled “Treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices”.

In this connection and as a response to note verbale ODA/14-2013/FMCT soliciting Member States views on an FMCT, including possible aspects thereof, Hungary would like to share the following observations and opinions:
Scope

Scope of an FMCT with regard to the definition of fissile material should be harmonized with that of the safeguards agreements of the International Atomic Energy Agency.

Since FMCT is meant to be a treaty banning the production of fissile material for use in nuclear weapons or other nuclear explosive devices, the definition to be provided for in the treaty should include fissile materials that can directly be used to build nuclear explosive devices in general. Applying a broader approach would, however, greatly contribute to non-proliferation by limiting the amount of direct-use materials that can be accessible to non-state actors for building improvised nuclear explosive devices. In this way FMCT would also be in line with internationally accepted nuclear security concepts of the physical protection of these materials.

International safeguards recognize that three materials can be produced in large quantities to manufacture nuclear weapons: (i) highly-enriched uranium containing 90 wt% U-235, (ii) weapon grade plutonium (Pu-239 above 90 wt%), and (iii) U-233. It is also recognized, however, that above a certain enrichment of uranium in U-235 it is feasible to produce a nuclear explosive device and that below that enrichment-level production of such a device is practically not feasible. This recognition resulted in the current safeguards structure in which uranium enriched above 20 wt% U-235 is considered weapons-useable material.

The mixture of plutonium isotopes theoretically can also be used to build nuclear explosive devices with the exception of plutonium with high Pu-238 content for which an 80 wt% threshold was established.

If these fissile materials are mixed with fission products (irradiated) they cannot practically be used to build nuclear explosive devices, only after reprocessing.

Neptunium-237 is also considered to be suitable for building nuclear weapons and other nuclear explosive devices. We recommend the inclusion of this material in the proposed definition, because its omission could promote the interest of nations in its production.

In line with the above reasoning the following definition for “fissile material” in the FMCT seems to be appropriate:

“Fissile material

Neptunium-237, plutonium-239, plutonium mixtures, uranium-233, uranium enriched in the isotopes 235 with the following exceptions:

- plutonium mixtures with Pu-238 concentrations equal or more than 80 wt%
- uranium enriched in the isotopes 235 with concentrations less than 20 wt%;
- fissile materials mixed with fission products (irradiated).”
Banning and verifying the production of fissile materials as defined above would strengthen the international non-proliferation regime by reducing discrimination between States, as well as by enhancing nuclear security.

**Verification**

Methods of verification depend on the definition of fissile material. According to this approach elements of fuel cycles to be verified under an FMCT can be identified.

Uranium enriched in the U-235 with concentrations not less than 20 wt% (HEU) can only be produced by an enrichment process of uranium in U-235. Enrichment facilities would be required to declare that either no production of HEU takes place or no HEU produced is diverted to the fabrication of nuclear explosive devices.

Plutonium can be produced by separation from irradiated uranium (mostly in the form of irradiated/spent reactor fuel). Separation may be carried out in large plants operating at commercial levels (reprocessing facilities), in smaller plants, or at laboratory bench level. It should also be noted that the separation of plutonium from fresh mixed oxide (MOX) fuel does not require the large facilities associated with commercial scale operation.

U-233 is produced by irradiating thorium with neutrons and by separation of uranium from irradiated thorium targets or thorium-containing spent nuclear fuel. The production results in the generation of nearly pure, weapons-usable product.

Significant quantities of Np-237 are also found in spent nuclear fuel which can also be separated. For instance a 1,000 megawatt electric pressurized water reactor (PWR) may produce about 25 tons of spent fuel containing about 10-12 kilograms of neptunium 237 annually. The same spent fuel contains about 250 kilograms of plutonium.

The end products of enrichment and separation (reprocessing) are usually passed on to the conversion processes to produce nuclear material in a form suitable for the manufacture of new fuel items, elements, assemblies, stockpiling, or nuclear explosive devices. This implies that not only enrichment and reprocessing facilities, but also conversion facilities processing fissile materials subject to FMCT should be placed under verification.

In line with the above reasoning Hungary proposes the following definition for production to be banned under the FMCT:

“Production:

*Enrichment of uranium in U-235; separation of plutonium and/or Np-237 from irradiated uranium; separation of U-233 from irradiated thorium and conversion of fissile material into weapon usable form.”
Banning the production of fissile materials for nuclear weapons and other explosive devices will certainly limit the amount of materials available for manufacturing nuclear weapons and decrease the threat of nuclear terrorism.

Therefore it is a priority to put an international verification system into operation for controlling the lack of future fissile material production for nuclear weapons or other nuclear explosive device purposes. This verification system would be in effect as soon as the FMTC enters into force.

**Stockpiles**

Hungary believes that an FMCT would be an essential step towards the elimination of nuclear weapons. The disarmament aspect of the fissile material ban does, however, raise the question of whether to include or not to include stockpiles in the scope of FMCT verification. While Hungary gives priority to the immediate ban of production of future fissile materials for nuclear weapon or other nuclear explosive device purposes and puts it in the core of the FMCT, it does not mean that elimination of fissile materials in use in existing nuclear weapons or of excess weapons grade fissile material should eventually not to be considered as part of the FMCT.

Our position is that methods and techniques to verify production of fissile materials are more developed and readily available among the ones regularly applied by the International Atomic Energy Agency’s inspectors for verification in safeguarded facilities in non-nuclear weapon states or in facilities under voluntary safeguards in the nuclear weapon states. A verification system (with appropriate technologies, methods and techniques) for the identification of fissile materials already in use of nuclear weapons and in excess of weapons have not yet been developed or mutually approved.

Therefore Hungary agrees that the elimination of stockpiles could eventually also be part of an FMCT, but on a phase out basis, and that the issue of stockpiles should not hamper the verification of a fissile material cut-off already immediately after the treaty's entry into force. Providing accountancy and verification of fissile material stockpiles may be subject to an additional protocol to the FMCT.

**Agency responsible for verification**

Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) obliges nuclear weapon states to put disarmament activities under “strict and effective international control.”

Hungary supports that a mandate for the FMCT verification is given to the International Atomic Energy Agency (IAEA).

The IAEA’s safeguards system seeks to give assurances on the non-diversion of declared nuclear materials from peaceful activities and on the absence of undeclared nuclear
materials and activities in states that concluded regional or bilateral safeguards agreements with the IAEA. Some elements of the IAEA’s safeguards verification system could be applied, without any major adjustments, for the FMCT verification system (containment and surveillance systems, nuclear material verification methods and techniques for identifying fissile materials, satellite imaginary, etc.). By this, duplication of the existing IAEA capabilities to monitor and verify nuclear materials and facilities could be avoided. Nevertheless, organizational and budgetary aspects to complement the IAEA’s safeguards verification system with other essential elements should also be considered so that FMCT verification challenges can fully be met.

Hungary sees great merit in initiatives that support the establishment of an FMCT standing verification group under the supervision of the IAEA Director General. This verification group would be independent from the IAEA Department of Safeguards and would work in close coordination with an FMCT Office. The FMCT standing verification group would have a multidisciplinary team, to meet the various challenges posed by FMCT verification. Tasks of the FMCTO, as well as the IAEA FMCT standing verification group should be carefully considered and developed by States parties.

**Entry into force**

It is clear that any binding legal obligations may only take effect from the date of the proposed Treaty’s entry into force. There are, basically, two possibilities for the entry into force of the eventual Treaty with respect to individual states parties. Either after having reached a specific number of states, including the individual state in question, adhering to it; or after the state deposits its instrument of ratification or accession.

Whichever case may arise, based on the provisions of the respective internal laws, Hungary would prefer the Treaty not to enter into force immediately on the day when the Treaty ratifications reach the prescribed threshold, or on the day of the deposition of the individual instruments of ratifications or accessions, but at least 30 days thereafter.